

Lack of sleep is linked to obesity, new evidence shows

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Can lack of sleep make you fat? A new paper which reviews the evidence from sleep restriction studies reveals that inadequate sleep is linked to obesity. The research, published in a special issue of the *The American Journal of Human Biology*, explores how lack of sleep can impact appetite regulation, impair glucose metabolism and increase blood pressure.

"Obesity develops when energy intake is greater than expenditure. Diet and physical activity play an important part in this, but an additional factor may be inadequate sleep," said Dr Kristen Knutson, from the University of Chicago. "A review of the evidence shows how short or poor quality sleep is linked to increased risk of obesity by de-regulating appetite, leading to increased [energy consumption](#)."

Dr Knutson accumulated evidence from experimental and observational studies of sleep. [Observational studies](#) revealed cross-sectional associations between getting fewer than six hours sleep and increased [body mass index](#) (BMI) or obesity.

The studies revealed how signals from the brain which control appetite regulation are impacted by experimental sleep restriction. Inadequate sleep impacts secretion of the signal hormones [ghrelin](#), which increases appetite, and leptin, which indicates when the body is satiated. This can lead to increased food intake without the compensating energy expenditure.

"In the United States 18% of adults are estimated to get less than 6 hours of sleep, which equates to 53 million short sleepers who may be at risk of associated obesity," said Knutson. "Poor sleeping patterns are not random and it is important to consider the social, cultural and environmental factors which can cause inadequate sleep so at-risk groups can be identified."

The evidence suggests the association between inadequate sleep and higher BMI is stronger in children and adolescents. It also shows that sleep deficiency in lower [socioeconomic groups](#) may result in greater associated obesity risks.

The majority of the studies Dr Knutson examined came from Western countries, which highlights the need for more research to understand sleep's role in disease risk. However other research papers in the special issue focus on obesity in the United Arab Emirates, Samoa, and Brazil.

"These findings show that sleeping poorly can increase a person's risk of developing obesity, diabetes, high blood pressure or heart disease," concluded Knutson. "Future research should determine whether efforts to improve sleep can also help prevent the development of these diseases or improve the lives of patients with these conditions."

More information: Kristen L. Knutson, "Does inadequate sleep play a role in vulnerability to obesity?" *American Journal of Human Biology*, January 2012, [DOI: 10.1002/ajhb.22219](https://doi.org/10.1002/ajhb.22219)

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